

REMARKS

Claims 1-44 were pending. Claims 1-10 have been canceled. Claims 11, 12, 26, 34, 35, 39, 40, and 44 have been amended. Claims 11-44 are pending.

Claims 11-44 stand rejected as being anticipated by U.S. Pat. No. 5,576,763 to Ackland et al. Applicant respectfully requests reconsideration of the rejection.

Claim 11 recites a semiconductor device including “at least two non-overlapping gate structures formed in a single layer” on a substrate, the gate structures being “spaced apart by a gap measuring less than 1300 Angstroms.”

Ackland et al. does not disclose “non-overlapping gate structures formed in a single layer” that are “spaced apart by a gap measuring less than 1300 Angstroms.” The Office Action refers to Fig. 2 as being illustrative of a semiconductor device with a “two gate structure formed in a single layer.” Applicant respectfully disagrees, and notes that the prior art device shown in Fig. 2 of Ackland et al. features a double-layer gate structure.¹ Applicant also notes that Fig. 3 of Ackland et al. shows a single-layer gate structure; however, the gap between photogate 101 and transfer gate 108 is formed by conventional masking techniques “well known to those of skill in the art.” See col. 5, lines 16-24. As applicant discusses in the present disclosure, conventional masking techniques enable lines and spaces between semiconductor structures down to 1300 micrometers. Ackland et al. does not anticipate the present invention as recited in claim 11. Claims 12-25 depend from claim 11, and are patentable over Ackland et al. for at least the same reasons.

Ackland et al. also does not anticipate claim 34, which recites an image processing apparatus that includes an image sensor having, *inter alia*, “at least two non-overlapping gate structures formed in a single layer” on a substrate. The gate structures are “spaced apart by a gap measuring less than 1300 Angstroms.” Ackland et al. illustrates overlapping gate structures in Fig. 2, and the gate structures of Fig. 3 are of conventional

¹ Indeed, the Office Action states on page 2, in reference to claim 13, that “Ackland et al. discloses...a double polysilicon structure.”

width. Ackland et al. does not anticipate the invention of claim 34. Claims 35-38, which depend from claim 34, are patentable over Ackland et al. for at least the same reasons.

Claim 26 recites a semiconductor device having “a plurality of non-overlapping conductive gates” formed over a substrate and “a lightly doped region in the substrate between two adjacent ones of the plurality of conductive gates.” The two adjacent ones of the plurality of conductive gates are “formed in a single layer and separated by a gap of less than 1300 Angstroms.” Ackland et al. does not disclose “non-overlapping conductive gates” that are “formed in a single layer” and “separated by a gap of less than 1300 Angstroms.” Claim 26 is not anticipated by Ackland et al. Claims 27-33 depend from claim 26 and are patentable for at least the same reasons.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: February 3, 2005

Respectfully submitted,

By 
Thomas J. D'Amico

Registration No.: 28,371

Peter McGee

Registration No.: 35,947

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorneys for Applicant